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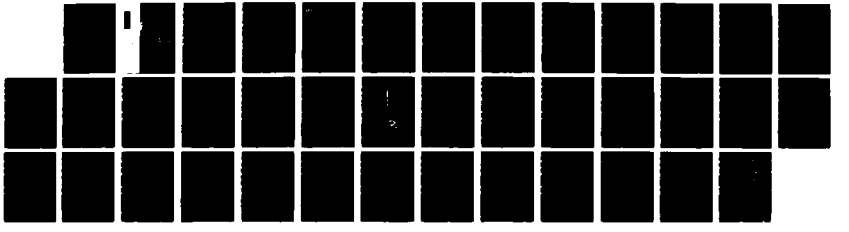

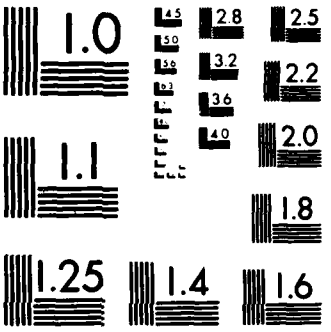

IN-HOUSE COST OF SOURCE INSPECTION

DEPARTMENT OF DEFENSE

DEFENSE LOGISTICS AGENCY

Cameron Station
Alexandria, Virginia 22304-6100

JULY 1987

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The purpose of this study was to estimate the additional cost to the government resulting from the use of mandatory source inspection in lieu of destination inspection for contractors who have a history of submitting quality deficient material. This report provides this estimate and documents the analytical process used. If the contract has been inspected at the source, approximately .2 hours of depot inspection are avoided. The average net cost to the government is approximately $150 per contract. Factors which can influence the average cost in order of decreasing importance are commodity (FSC), dollar value of the contract, and DCAS Region.

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IN-HOUSE COST OF SOURCE INSPECTION

July 1987

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DLA-LO

31 Jul 87

FOREWORD

The Defense Logistics Agency (DLA) Contracting Directorate tasked the DLA Operations Research and Economic Analysis Office to estimate the additional cost to the Government resulting from the use of mandatory source inspection in lieu of destination inspection for contractors who have a history of submitting quality deficient material. This report provides this estimate and documents the analytical process used.

This proposed policy change requires, on the average per contract, approximately 6.5 hours of additional in-house manhours at a cost of approximately $150. The average cost per contract is sensitive to commodity differences, dollar value of the contract and the regional location of the contractor. The major contributor to the cost estimate is the cost of the Defense Contract Administration Services' (DCAS) Quality Assurance functions.

Recommendations include (1) The use of look-up tables for a Defense Industrial Supply Center (DISC) test of the policy change. Look-up tables are provided for estimated costs based on Federal Supply Class, contract dollar value and DCAS region. (2) The updating of costs annually for pay raises and every two years for manhour changes. (3) The extension of the study methodology to the other DLA Supply Centers if the DISC test is successful.

ROGER C. ROY
Deputy Assistant Director
Policy and Plans

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EXECUTIVE SUMMARY

The Defense Industrial Supply Center (DISC), in an effort to improve the quality of the products procured, has proposed requiring a mandatory source inspection for small purchases from contractors who have a history of submitting deficient material under destination inspection procedures. Since this policy change would result in an increase in cost to the Government, DISC has proposed the addition of a factor to cover these costs during the bid evaluation process. The $250 factor currently allowed for administrative costs by the Federal Acquisition Regulation was originally proposed. However, DLA's Contracting Directorate tasked the Operations Research and Economic Analysis Office to estimate the actual differential cost resulting from source versus destination inspection.

Based on Defense Contract Administrative Services (DCAS) Quality Assurance Management Information System (QAMIS) data and Defense Integrated Management Engineering System (DIMES) standards, each contract requiring source inspection in lieu of normal destination inspection adds about 6.5 hours of in-house effort. The average net cost to the Government is approximately $150 per contract. The average cost is sensitive to commodity, dollar value of the contract and the DCAS region.

Four implementation alternatives are offered in para IV ranging from a simple DLA-wide average cost to more detailed look-up tables which consider commodity differences, dollar value differences and geography. From a purely analytical viewpoint, look-up tables are recommended. However, other factors such as ease of use, defendability under protest situations, and maintainability must be considered.

Regardless of the implementation approach taken, the costs presented must be periodically updated. It is recommended that annual adjustments be made for pay raises. A bottoms-up update should be performed every two years to ensure that QAMIS and DIMES standards have not changed.

If this study is implemented and the cost factor is used in the evaluation process, there will probably be some instances when the low bidder, because of quality problems in the past, will not be awarded the contract. This will occur less frequently than if the DISC proposal value of $250 per contract is used. In either case, a protest is possible. This report provides the rationale completely supporting the cost factor used and hopefully, will help sustain any resulting protests.

I. INTRODUCTION

A. Background. The Defense Industrial Supply Center (DISC), a test-bed for contracting reforms, has implemented a new program for certain contractors that have a history of submitting quality deficient material. Under these new procedures, a mandatory source inspection will be required. DISC has proposed that, because of the added burden and government administrative cost, the in-house cost of source inspection be included in the determination of low responsible offerer for award. DISC proposed the $250.00 factor for administrative cost from Federal Acquisition Regulation (FAR) 52.214-22, FAR 52.215-34 be used for bid evaluation. Defense Logistics Agency, Contracting Directorate (DLA-P) concurred with the proposal but felt that a more pertinent cost factor should be used. The Policy Branch (DLA-PPR) tasked the DLA Operations Research and Economic Analysis Office (DLA-LO) to develop cost factors for this application.

B. Problem Statement. To determine the differential cost to the Government when source inspection is required for small purchase contracts that are normally inspected at destination.

C. Objective

1. To identify the costs related to a mandatory source inspection.

2. To develop a methodology to estimate those in-house costs.

3. To develop a model that can be tailored for DISC contracting personnel use in bid evaluation.

D. Scope

1. Although designed for use at DISC, the model should be flexible to allow the other DLA centers to develop cost factors if the DISC experiment is successful.

2. Since current DISC policy requires source inspection for large purchases, the factors apply primarily to small purchase contracts (under $25,000) to contractors with a past history of supplying deficient material.

3. The factors developed are based on Defense Contract Administrative Service (DCAS) data obtained from January 1986 - March 1987.

II. METHODOLOGY

A. Assumptions

1. The source inspection will be performed under Nonresident, Standard Inspection procedures. Excluded from the data base are resident facilities and facilities under MIL-Q-9858A (MIL-Q) and MIL-I-45208A (MIL-I) procedures.

2. There will be one visit per contract.

B. Sources of Data

1. Source Inspection. The primary source of data for the in-house cost of source inspection is the DCAS Quality Assurance Management Information System (QAMIS). QAMIS exists in two forms at the nine DCAS regions (DCASR). Boston (DCASR-BOS), Los Angeles (DCASR-LA), New York (DCASR-NY) and Philadelphia (DCASR-PHI) operate under the old, batch oriented system. The other five regions have the new, on-line version. The newer version has a more detailed data structure for manhour reporting and thus provides better visibility of in-house costs. Also, the newer version permits automated break-outs by commodity group and Quality Assurance (QA) Provision such as MIL-Q, MIL-I and standard inspection. Table 1 specifies the QAMIS sources used.

2. Contract Administration. The primary source of data for contract administration costs are the Defense Integrated Management Engineering System (DIMES) Standards. Specific standards used were Special Purpose Data for MOCAS Contract Input Processing - Standard Number 5220 Manhour Account Code 652.01, December 1985, and Special Purpose Data for MOCAS Delivery Documents Processing and Research (Source Acceptance) - Standard Number 5230 Manhour Account Code 652.01, December 1985.

3. Destination Inspection Avoidance. DIMES standards Special Purpose Data for Inspection of New Procurement - Bin - Standard Number 3271 Manhour Account Code 322.01, January 1986 and Special Purpose Data for Inspection of New Procurement - Bulk - Standard Number 3272 Manhour Account Code 324.01, April 1986 were used.

C. General Approach. Only direct labor and personnel related overhead costs were considered. Overhead costs such as supervision, higher level staff, facilities, administrative support, etc. are believed to be fixed overhead.

1. Average manhours obtained from data sources identified above were developed for the relevant tasks. Of course, a particular contract situation may be above or below the average. Three key factors were addressed:

a. The commodity or Federal Supply Class (FSC).

b. The location of the contractor.

c. The dollar value of the contract.

2. Additional factors were considered but rejected because of the desire to make the model relatively simple to use and because of insufficient data given the time allowed to perform the analysis.

Table 1

SOURCES OF QA DATA

Source	Regions	Time Frame	Data Elements
Facility Profile	ATL, CHI, CLE, DAL, STL	Mar 87	Miles between contractor and QA Office
Performance History File	ATL	Jan 86-Feb 87	Manhours per visit
	CHI	Feb 86-Sep 86	
	CLE	Feb 86-Sep 86	
	DAL	Apr 86-Sep 86	
	STL	Feb 86-Mar 86	
UYMJ 02 Report	BOS	Oct 86-Mar 87	Manhours per visit (partial)
	PHI	Oct 86-Mar 87	
	LA	Oct 86-Mar 87	
	NY	Not Used	

3. Current cost factors were applied to convert average parameters such as manhours to cost. Costs provided are considered to be FY87 dollars.

D. Cost Model Methodology

1. Source Inspection. The cost per contract of source inspection is the sum of direct labor and transportation cost of the QA representative (QAR) computed as follows:

a. Direct Labor. The cost of direct labor is the product of the average number of manhours per visit times a labor rate which includes base pay, fringe benefits and training.

(1) Manhours per visit were determined for each QA commodity for DCAS regions Atlanta (DCASR-ATL), Chicago (DCASR-CHI), Cleveland (DCASR-CLE), Dallas (DCASR-DAL) and St. Louis (DCASR-STL) from the QAMIS. Table 2 provides information on the number of monthly data observations for each region for various commodities. Manhours per visit at the other four regions were assumed to equal the average of the five regions with the new QAMIS. Excluded were records with suspected outliers. Manhours per visit were also stratified by the dollar value of the contract. Generally, as the dollar value increases, the time spent on source inspection increases. The components, defined in DLA Manual (DLAM) 8200.2, of the manhours per visit are:

(a) Administrative Support Hours - ADMIN HRS

(b) Planning Hours - PLAN HRS

(c) Travel Hours - TRVL HRS

(d) Inspection Hours - PVI HRS

(e) Total Quality Deficiency Report Hours - QDR HRS

(f) Reinspection Hours - REINS HRS

(g) Intensified Inspection Hours - INT INSP HRS

(h) Contractor Meeting Hours - MTG HRS

(2) Labor rates were determined assuming a General Schedule (GS) 10 step 4 QAR. Base hourly pay was found from a current pay scale. A fringe benefit factor of 60.71% from DLAM 7041.1, Economic Analysis May 1985 was applied. This factor includes the government contribution to civilian retirement, disability, health and life insurance, social security as well as allowance for sick leave, annual leave, holidays and other paid leave accruals. An additional 6.4% was included in the labor rate to reflect training time which is excluded from the QAMIS. This factor was obtained from the 1174 Report for all nine regions from October 1986 - March 1987.

Table 2

Performance History File Data

NUMBER OF MONTHLY OBSERVATIONS

DCASR

COMMODITY	ATL	CHI	CLE	DAL	STL	TOTAL	DISC WRKLD
AIRCRAFT	137	34	99	103	186	559	4.13%
MUNITIONS	16	10	1	0	20	47	0.00%
C&T	421	31	104	43	93	692	0.02%
ELECTRICAL	261	103	142	56	135	697	0.00%
GENERAL	686	177	357	139	384	1743	84.31%
CHEMICAL	237	44	54	151	138	624	0.00%
ELECTRONIC	214	65	78	100	228	685	0.00%
MECHANICAL	846	673	1433	289	1020	4261	11.55%
NUCLEAR	25	2	3	3	8	41	0.00%
PETROLEUM	149	21	29	251	186	636	0.00%
SERVICE	125	87	284	37	20	553	0.00%
WEAPONS	30	20	32	0	17	99	0.00%
MSSL & SPACE	24	10	26	0	48	108	0.00%
TOTAL	3171	1277	2642	1172	2483	10745	100.01%

b. Transportation Costs. The average cost of transportation was computed to be the round trip distance traveled times the mileage rate of $ .205 found in the Joint Travel Regulation. The round trip distance was estimated by doubling the distance in miles between the QAR's workplace and the facility. These data were obtained from the Facility Profile contained in the new QAMIS. The distances within DCASR's - BOS, LA, NY and PHI were assumed to be equal to the average of the remaining five DCASR's. Since this cost is relatively small in relation to labor, the source inspection cost is not sensitive to this assumption.

2. Contract Administration. Because of the relatively low dollar value of the contracts in question, contract administrative costs within the Contract Administration Division of the DCASR should usually be relatively minor compared to the average DCAS contract. There will be some expense, however, associated with the data entry function into the Mechanization of Contract Administrative Service (MOCAS) system. Each contract requires at least an initial data entry and close out. This cost is estimated by applying DIMES standards against labor rates based on journeyman level of GS-5 step 4 Input Clerk except at DCASR-CHI where the level is GS-6. For regions still operating under the batch MOCAS version a 15% higher than standard factor was applied based on a January 1986 study by this office entitled DCASR Data Input Workload Capacity Study.

3. Destination Inspection Avoidance. If the contract is inspected and accepted at the source, there is a potential cost avoidance at the depot. Quantifying this avoidance is uncertain because of recent policy shift to increase the level of effort of destination inspection. Historical data and standards may not adequately reflect future conditions. Also uncertain is the exact nature of destination activities for those items which are affected by the mandatory inspection at source. One extreme hypothesis is that despite the source inspection, DLA could decide to provide the same destination processing to the contract as though it were not source inspected. This is currently done to a degree for many Clothing and Textile contracts. The avoidance in this extreme would be $0. A more likely scenario would be that destination inspection would be reduced upon receipt of a source-inspected line and that some routine inspection would still be required. This scenario is assumed in the following:

a. Current procedures are stated in the Foreword of the DIMES Standard 3721 "Examples of the actions included in the task are (1) Ensure accurate documentation of materiel; (2) Inspect for packaging and marking deficiencies; (3) Perform routine inspection of metal stock items; (4) Route materiel deficient in packaging and/or marking of Packaging, Packing, Preservation and Marking (PPP&M); (5) Route materiel in litigation to the Condition "L" hold area; (6) Route accepted materiel to Warehousing to be issued as stock."

b. Under proposed policy it is assumed that subtask in (2) of the preceding paragraph will be reduced and subtask (5) will be eliminated.

c. An additional assumption made is that 60% of the items are bin items, 40% are bulk items. Also assumed is that number of lines per contract is 7. The average inspector is assumed to be a Wage Grade (WG) 7 step 3. The total in-house cost is not sensitive to these assumptions because the avoidance is relatively small compared to the cost of DCAS QA.

d. DIMES standard 3271 (bin) was recalculated by eliminating elements A18, A25, A26 and A27. The standard was reduced from .1110 manhours per line to .0752. DIMES standard 3272 was recalulated by eliminating corresponding elements A23, A36, A37 and A38. This standard was reduced from .1687 manhours per line to .1338 manhours per line.

E. Validation Methodology. Source inspection manhours per visit, the major contribution to cost, were compared with data contained in the UYMJ 02 reports, Monthly QA Activity Report by Contractor, for DCASRs BOS, LA, and PHI. A six month average from October 1986 to March 1987 was found by averaging the Nonresident summary hours and visit counts for each region. The 02 report does not break out MIL-I and MIL-Q facilities, but these are a minority of nonresident facilities. The only visible cost elements in the 02 report that can be compared to the new QAMIS regions are Inspection Hours, Corrective Action (QDR) Hours and Travel Hours.

III. ANALYSIS

A. By QA Commodity. DLAM 8200.2 contains a two alpha commodity breakout which is cross referenced to Federal Supply Class (FSC). At this time there are insufficient data to produce a cost factor for each two alpha code; but in most cases, there are enough for the first alpha level of breakout. The thirteen commodity cost factors are shown in Appendix A (There have been 3 additional commodity groups formed but the conversion has been recent and there are little data available on the three new groups. The new groups formed are Marine (from Mechanical), Electronic Systems (from Electronic) and Vehicles (from Mechanical).) At the present time DLA has no active Munitions, Nuclear or Service items that are managed by the Supply Centers. As shown in Table 2, DISC commodities are mostly classified by DCAS as General (84.3% of DISC contracts). Mechancial commodity accounts for 11.6% of DISC buys and Aircraft another 4.1%. DISC is responsible for a few Clothing and Textile (C&T), Electrical and Missiles and Space Commodity items but seldom buys these items.

B. By FSC. Using the cross reference tables in DLAM 8200.2, the average costs per contract by FSC were developed for DISC and are shown in Table 3. Similar tables can easily be developed for the other DLA Supply centers from Appendix A data.

C. By Dollar Value. After the appropriate cost value is obtained from Table 3, a separate adjustment must be made to reflect the dollar value of the contract. Multiplicative factors, generated by stratifying the QAMIS manhours by average dollar value per contract are shown in Table

Average Cost per Dollar for DLA Commodities

COST OF SOURCE INSPECTION
AS OF JUN 1987
DISC

FSC BEGIN	FSC END	ATL	BOS	DET	LOS	MIA	LA	NY	PHI	STL	DLA
1560		$123	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	$132	$132	$131
1670		$171	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	$181	$181	$237	$180
1680		$124	$132	$130	$134	[illegible]	$132	[illegible]	$132	$132	$131
2020	2040	$140	$146	[illegible]	[illegible]	[illegible]	[illegible]	$146	$146	$143	$146
2810	2840	$124	$132	$135	[illegible]	[illegible]	[illegible]	$132	$132	$132	$131
2845		$127	$120	[illegible]	[illegible]	[illegible]	[illegible]	$120	$120	$117	$120
2915	2945	$128	$132	[illegible]	[illegible]	[illegible]	[illegible]	$132	$132	$132	$131
2950		$148	$146	[illegible]	[illegible]	[illegible]	[illegible]	$146	$146	$143	$146
2995		$134	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	$132	$132	$132	$131
3110	4030	$145	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	$146	$146	$143	$146
5305	5365	$150	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	$149	$149	$140	$149
6145		$147	$143	[illegible]	[illegible]	[illegible]	[illegible]	$143	$143	$128	$142
9505	9630	$140	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	$149	$149	$140	$149

Sensitivity [illegible] Dollar Value

DOLLAR VALUE ANALYSIS

DOLLARS FOR CONTRACT ABOVE	DOLLARS FOR CONTRACT BELOW	[illegible]	[illegible]	[illegible]	COST PER CONTRACT	COST FACTOR
$0	$1,000	[illegible]	[illegible]	[illegible]	[illegible]	0.8870
$1,000	$2,500	[illegible]	[illegible]	[illegible]	[illegible]	0.9541
$2,500	$10,000	[illegible]	[illegible]	[illegible]	[illegible]	0.9898
$10,000	$25,000	[illegible]	[illegible]	[illegible]	[illegible]	1.0555
$25,000		[illegible]	[illegible]	[illegible]	[illegible]	1.0702

4. It was observed that Inspection Hours, Reinspection Hours, Intensified Inspection Hours, Total Quality Deficiency Report Hours, Meeting Hours and Administrative Hours were positively correlated with dollar value. Travel hours (slight positive correlation) and Planning Hours (slight negative correlation) were fairly insensitive to the dollar value per contract.

D. Distribution of Costs

1. By Cost Element. Generally the cost of quality assurance was greater than the cost of contract administration by a factor of 9 to 1. The source inspection cost is driven by the time to inspect, travel, plan, administer and meet with the contractor in decreasing order of degree. Cost avoidance at destination depot is insignificant. Figure 1 provides a cost distribution by element. Figure 2 shows a further breakout of the dominant cost element.

2. By Commodity Group. Commodity group differences were observed in all cost elements ranging from $120 per visit to $195 per visit. For those commodities that affect DLA significantly, the range was $131 - $195. There are many reasons for this observation. Some commodities, such as Petroleum and Chemical, have facilities that are in more remote locations, resulting in increased travel time. Some commodities have large lot sizes (Clothing and Textile) which require more inspection time. Commodities with more advanced technology may require more planning prior to inspection.

3. By Region. Overall regional differences were relatively insignificant, ranging from $150 - $160. However within certain commodity groups, there were some significant regional differences. Some of this variation is attributable to the small number of data points in some commodities (See Table 2). Also, regional differences can be explained by economies of scale. Regions with a high concentration of commodity tend to be more efficient than others (i.e. DAL and Petroleum, ATL and Clothing and Textile). Furthermore, some regions are more geographically concentrated than others, resulting in lower transportation and travel costs.

E. Validation. Data from the UYMJ 02 Report are shown in App. A (top of p. A-2) under Travel, PVI and QDR for Regions BOS, LA and PHI. There was good agreement on PVI and QDR hours between regions. Travel Hours computed at BOS were a little higher than normal. However, Travel Hours at LA and PHI were incredibly low per visit (thus they are replaced by DLA averages in App. A). DCASR-NY data did not arrive in time to be analyzed.

IV. IMPLEMENTATION

A. General. To implement the results of this analysis into the bid evaluation process at DISC, several alternatives are available. The alternatives vary in complexity and resolution. Simple, across the board averages are easier to use, but may not be as accurate in reflecting the conditions of the specific bid being evaluated. If a contract is known to require multiple visits, the factors below can be multiplied by the number of known visits, subtracting $10 for each additional visit from the product.

Figure 1

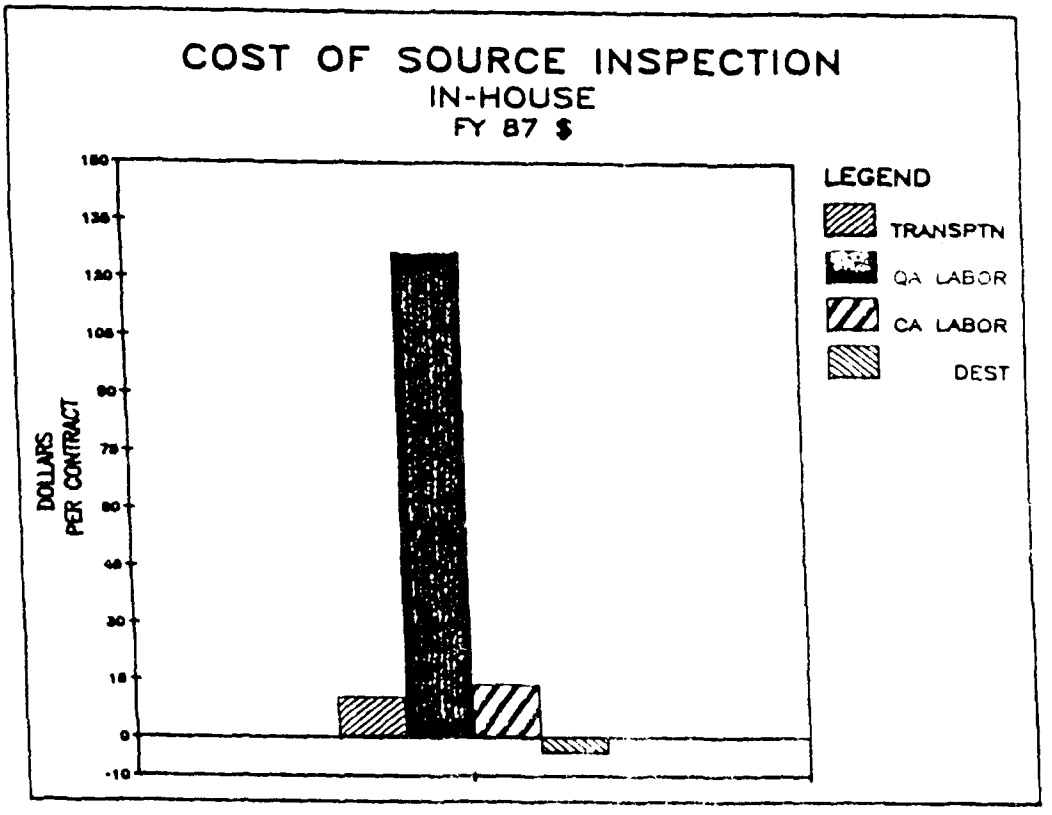
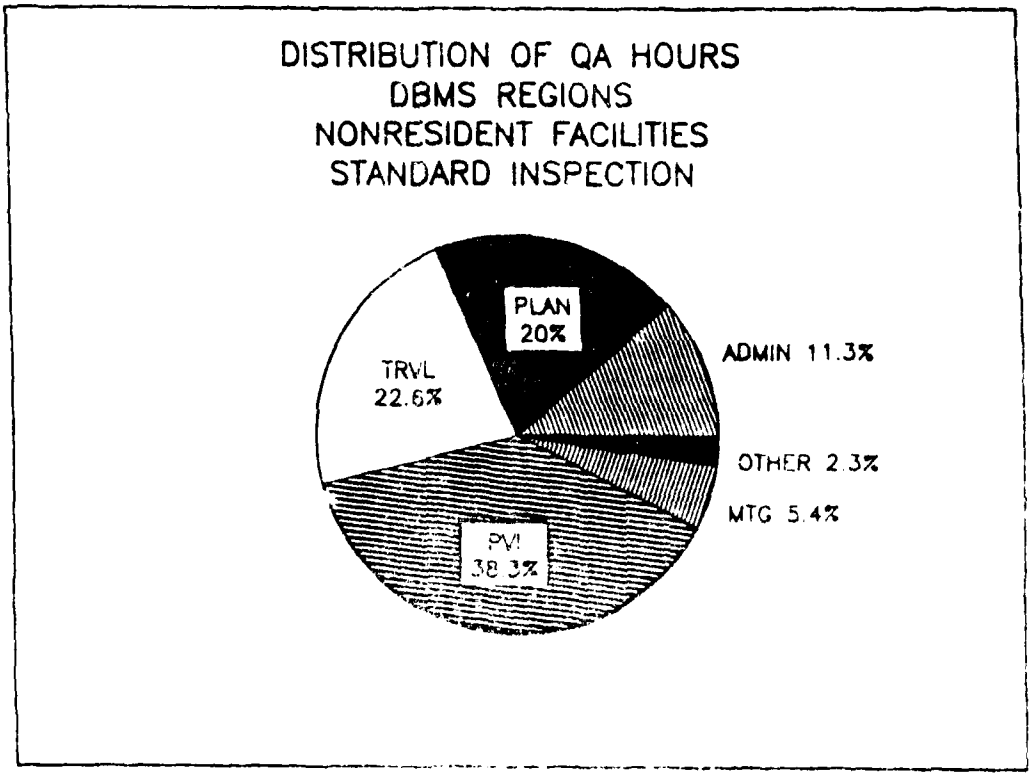


Figure 2



1. DLA-Average Cost. Use a DLA-average cost. Excluding Munitions, Nuclear and Service commodities, this value is $153 per contract as shown in Appendix A, p. A-9.

2. DISC-Average Cost. Use a DISC-average cost. Reflecting the commodity groups DISC buys, a weighted average is $148 per contract as shown in Appendix A, p. A-9. Each supply center would have a different, single value to use. The same contractor, dealing with different centers, may question the difference. The question is easily answered by explaining that commodity groups have differing QA inspection requirements.

3. DISC-Average Cost Adjusted. Use a DISC-average cost, adjusted for the dollar value of the contract. Contracts under $1000 would apply a cost of $131. Contracts between $1000 and $2500 would use $141. $146 applies to contracts between $2500 and $10,000. $156 is the appropriate factor for contracts between $10,000 and $25,000 and $158 applies to large purchases. This approach could be challenged by a contractor who noticed that the bid adjustment varied from contract to contract for the same item. The justification of this approach would require an understanding that larger contracts generally require more time to inspect because of larger sample sizes, more opportunity for rejections and corrective actions, etc.

4. Look-Up Table. Use a look-up table that reflects the commodity (FSC), the dollar value of the contract and the location of the contractor by DCAS region. Appendix B Tables are provided for this purpose for DISC. This approach would most accurately reflect the conditions of the specific bid being evaluated. Although more complex and prone to error, this method makes maximum use of available historical data.

B. Update. Costs presented in this analysis are current as of the publication date. As time progresses, these factors will become less accurate. For near term updates, a simple adjustment for in-house salary increases should suffice. Long term changes in conditions, policy, industrial base, technology, etc. will render these factors obsolete. Thus a periodic bottoms-up update will be required. Appendix C contains SPSS programs and notes to facilitate an update.

V. CONCLUSIONS

The average DLA contract administered by DCAS is estimated to require 5.657 hours of source inspection time and 1.063 hours of contract administration time. If the contract has been inspected at the source, .248 hours of depot inspection are avoided. The average net cost to the government is approximately $150 per contract.

Factors which can influence the average cost in order of decreasing importance are commodity (FSC), dollar value of the contract and DCAS region.

VI. RECOMMENDATIONS

During the test period at DISC, it is recommended that one of the four proposed implementation schemes be selected in consultation with DISC contracting personnel. From a purely analytical viewpoint, use of look-up tables in Appendix B is recommended.

Tables should be updated annually by DISC to reflect changes in GS and WG pay scales only. Tables should be extensively updated every two years by DLA-LO to reflect changes in DIMES standards and efficiency trends.

Other centers wishing to follow the lead of DISC can create their own tables from Appendix A and DLAM 8200.2.

APPENDIX A

Cost Breakout by DCAS Commodity and DCAS Region

DCASR

TOTAL COMMODITY:	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
ALL										
MILES	24.84	25.65	19.25	27.12	27.24	25.65	25.65	25.65	29.8	25.65
ADMIN HRS	0.580	0.644	0.515	0.818	0.656	0.644	0.644	0.644	0.653	0.644
PLAN HRS	0.882	0.951	0.963	0.794	1.171	0.951	0.951	0.951	0.942	0.951
TRVL HRS	1.522	1.700	1.275	1.149	1.576	1.450	1.450	1.450	1.480	1.450
PVI HRS	2.270	2.164	2.321	2.307	2.145	1.875	2.175	2.056	2.265	2.175
QDR HRS	0.077	0.045	0.073	0.188	0.093	0.180	0.101	0.101	0.053	0.101
REINS HRS	0.012	0.021	0.038	0.028	0.013	0.021	0.021	0.021	0.012	0.021
INT INSP HRS	0.001	0.009	0.003	0.033	0.003	0.009	0.009	0.009	0.004	0.009
MTG HRS	0.479	0.306	0.298	0.232	0.289	0.306	0.306	0.306	0.233	0.306
TOT HRS	5.822	5.840	5.485	5.549	5.945	5.436	5.657	5.538	5.642	5.657
COST OF QA	$141	$142	$131	$136	$145	$133	$137	$135	$139	$137
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$152	$156	$145	$148	$157	$147	$152	$149	$151	$151
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$149	$152	$141	$144	$153	$143	$148	$145	$147	$147

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
AIRCRAFT										
MILES	20.01		13.89	29.54	17.31				15.41	19.23
ADMIN HRS	0.421		0.632	0.646	0.288				0.512	0.500
PLAN HRS	0.861		0.977	0.938	1.410				1.057	1.049
TRVL HRS	0.981		1.112	1.103	0.999				1.108	1.061
PVI HRS	2.062		2.042	2.038	2.030				2.230	2.080
QDR HRS	0.052		0.177	0.059	0.113				0.059	0.092
REINS HRS	0.000		0.034	0.014	0.005				0.020	0.015
INT INSP HRS	0.000		0.000	0.000	0.000				0.000	0.000
MTG HRS	0.387		0.367	0.304	0.161				0.247	0.293
TOT HRS	4.764		5.341	5.101	5.007				5.232	5.069
COST OF QA	$115	$122	$126	$127	$119	$122	$122	$122	$124	$122
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$128	$136	$140	$139	$132	$136	$136	$136	$136	$136
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$124	$132	$135	$135	$128	$132	$132	$132	$132	$131

DCASR

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
MUNITIONS										
MILES	16.55		14.4	27.75					37	19.14
ADMIN HRS	0.188		0.050	2.000					0.852	0.772
PLAN HRS	0.765		0.617	0.000					0.283	0.416
TRVL HRS	1.100		0.683	1.000					1.314	1.024
PVI HRS	1.630		1.617	3.000					3.125	2.343
QDR HRS	0.094		0.000	0.000					0.042	0.034
REINS HRS	0.063		0.000	0.000					0.030	0.023
INT INSP HRS	0.000		0.000	0.000					0.000	0.000
MTG HRS	0.312		0.383	0.000					0.308	0.251
TOT HRS	4.150		3.350	6.000					5.953	4.863
COST OF QA	$100	$119	$81	$146	$119	$119	$119	$119	$149	$119
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$112	$133	$95	$159	$132	$133	$133	$133	$161	$132
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$108	$129	$91	$154	$127	$129	$129	$129	$157	$128

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
C&T										
MILES	37.57		24.09	44.71	45.82				50.77	40.59
ADMIN HRS	0.749		0.817	0.568	0.909				0.882	0.785
PLAN HRS	0.971		1.446	0.322	0.545				1.601	0.977
TRVL HRS	1.378		1.070	1.254	1.818				2.127	1.529
PVI HRS	2.700		3.187	2.730	2.834				3.587	3.008
QDR HRS	0.239		0.100	0.137	0.256				0.150	0.176
REINS HRS	0.030		0.000	0.082	0.000				0.054	0.033
INT INSP HRS	0.002		0.000	0.019	0.000				0.000	0.004
MTG HRS	0.631		0.397	0.164	0.255				0.393	0.368
TOT HRS	6.700		7.017	5.276	6.617				8.794	6.881
COST OF QA	$166	$171	$167	$137	$167	$171	$171	$171	$218	$171
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$178	$185	$181	$149	$180	$185	$185	$185	$231	$185
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$174	$181	$177	$145	$176	$181	$181	$181	$227	$180

DCASR

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
ELECTRICAL										
MILES	23.06		17.42	24.44	32.31				17.02	22.85
ADMIN HRS	0.491		0.404	0.630	0.507				0.501	0.506
PLAN HRS	0.992		1.083	0.804	0.896				0.748	0.904
TRVL HRS	1.378		1.042	1.178	2.070				1.320	1.398
PVI HRS	2.234		2.351	1.947	2.618				2.159	2.262
QDR HRS	0.116		0.036	0.051	0.052				0.052	0.061
REINS HRS	0.007		0.042	0.022	0.068				0.028	0.033
INT INSP HRS	0.000		0.000	0.000	0.000				0.000	0.000
MTG HRS	0.540		0.393	0.260	0.293				0.216	0.341
TOT HRS	5.758		5.350	4.891	6.503				5.024	5.505
COST OF QA	$139	$133	$127	$120	$159	$133	$133	$133	$120	$133
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$151	$147	$141	$132	$172	$147	$147	$147	$132	$146
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$147	$143	$137	$128	$168	$143	$143	$143	$128	$142

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
GENERAL										
MILES	30.81		21.78	25.49	28.74				28.42	27.05
ADMIN HRS	0.521		0.520	0.713	0.500				0.742	0.599
PLAN HRS	0.891		1.223	0.640	1.034				0.754	0.908
TRVL HRS	1.852		1.327	1.190	1.730				1.375	1.495
PVI HRS	2.447		2.332	2.370	2.348				2.196	2.339
QDR HRS	0.029		0.065	0.113	0.086				0.026	0.064
REINS HRS	0.008		0.017	0.004	0.004				0.006	0.008
INT INSP HRS	0.000		0.000	0.004	0.000				0.000	0.001
MTG HRS	0.453		0.332	0.214	0.286				0.226	0.302
TOT HRS	6.200		5.815	5.248	5.989				5.324	5.715
COST OF QA	$152	$139	$139	$128	$146	$139	$139	$139	$131	$139
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$164	$153	$153	$141	$159	$153	$153	$153	$144	$153
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$160	$149	$149	$137	$155	$149	$149	$149	$140	$149

DCASR

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
CHEMICAL										
MILES	19.86		24.06	30.73	30.54				36.75	28.39
ADMIN HRS	0.414		0.670	1.720	0.878				0.761	0.889
PLAN HRS	0.626		0.307	0.804	1.527				0.593	0.771
TRVL HRS	1.448		1.276	1.909	1.535				1.239	1.481
PVI HRS	1.909		1.705	2.092	2.228				2.055	1.998
QDR HRS	0.021		0.051	0.136	0.029				0.118	0.071
REINS HRS	0.001		0.051	0.000	0.000				0.018	0.014
INT INSP HRS	0.000		0.017	0.000	0.013				0.000	0.006
MTG HRS	0.430		0.189	0.307	0.264				0.175	0.273
TOT HRS	4.849		4.267	6.968	6.474				4.958	5.503
COST OF QA	$117	$135	$106	$169	$158	$135	$135	$135	$126	$135
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$129	$149	$120	$181	$170	$149	$149	$149	$139	$149
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$125	$145	$115	$177	$166	$145	$145	$145	$135	$145

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
ELECTRONICS										
MILES	16.90		15.46	15.54	19.09				21.59	17.72
ADMIN HRS	0.407		0.368	0.235	1.501				0.483	0.599
PLAN HRS	0.918		1.214	0.838	1.747				0.674	1.078
TRVL HRS	1.374		2.223	1.156	0.980				1.420	1.431
PVI HRS	2.256		2.526	2.206	2.292				2.502	2.356
QDR HRS	0.093		0.047	0.053	0.405				0.025	0.125
REINS HRS	0.005		0.044	0.000	0.055				0.016	0.024
INT INSP HRS	0.000		0.000	0.000	0.000				0.000	0.000
MTG HRS	0.449		0.562	0.393	0.531				0.232	0.434
TOT HRS	5.503		6.984	4.882	7.509				5.353	6.046
COST OF QA	$130	$143	$163	$116	$176	$143	$143	$143	$129	$143
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$143	$157	$177	$128	$189	$157	$157	$157	$141	$156
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$139	$153	$173	$124	$185	$153	$153	$153	$137	$152

DCASR

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
MECHANICAL										
MILES	20.42		18.3	25.83	21.05				27.4	22.60
ADMIN HRS	0.623		0.540	0.896	0.444				0.586	0.618
PLAN HRS	0.969		0.899	0.832	1.344				0.776	0.964
TRVL HRS	1.443		1.243	1.122	1.631				1.502	1.388
PVI HRS	2.252		2.251	2.272	2.428				2.380	2.316
QDR HRS	0.055		0.074	0.086	0.044				0.042	0.060
REINS HRS	0.019		0.035	0.035	0.007				0.007	0.020
INT INSP HRS	0.001		0.004	0.058	0.003				0.000	0.013
MTG HRS	0.472		0.270	0.215	0.242				0.211	0.282
TOT HRS	5.833		5.315	5.517	6.143				5.504	5.662
COST OF QA	$139	$136	$127	$134	$146	$136	$136	$136	$135	$136
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$152	$150	$141	$147	$159	$150	$150	$150	$147	$150
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$148	$146	$137	$143	$155	$146	$146	$146	$143	$146

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
NUCLEAR										
MILES	20.33		11.33	27.44	20				17	19.22
ADMIN HRS	0.690		0.667	0.000	3.111				0.000	0.894
PLAN HRS	0.650		0.333	0.222	0.444				0.479	0.426
TRVL HRS	1.053		1.000	1.000	1.333				0.354	0.948
PVI HRS	1.613		3.167	1.667	3.333				1.250	2.206
QDR HRS	0.080		0.000	0.000	0.222				0.000	0.060
REINS HRS	0.000		0.000	0.111	0.000				0.000	0.022
INT INSP HRS	0.000		0.000	0.000	0.000				0.000	0.000
MTG HRS	0.580		0.000	0.333	0.222				0.000	0.227
TOT HRS	4.667		5.167	3.333	8.667				2.083	4.783
COST OF QA	$113	$115	$121	$86	$203	$115	$115	$115	$54	$115
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$126	$129	$135	$99	$215	$129	$129	$129	$66	$129
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$121	$125	$130	$94	$211	$125	$125	$125	$62	$125

DCASR

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
PETROLEUM										
MILES	42.12		54.39	70.32	92.66				121.32	76.16
ADMIN HRS	1.054		1.595	0.459	0.698				1.192	1.000
PLAN HRS	0.584		1.595	0.774	0.834				0.537	0.865
TRVL HRS	1.654		1.635	2.644	1.839				2.297	2.014
PVI HRS	1.745		3.357	5.215	1.413				1.352	2.617
QDR HRS	0.005		0.048	0.327	0.054				0.135	0.114
REINS HRS	0.000		0.000	0.002	0.011				0.008	0.004
INT INSP HRS	0.000		0.000	0.000	0.000				0.000	0.000
MTG HRS	0.301		0.119	0.214	0.360				0.383	0.275
TOT HRS	5.343		8.349	9.635	5.208				5.903	6.888
COST OF QA	$137	$186	$210	$245	$155	$186	$186	$186	$182	$186
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$150	$200	$224	$258	$167	$200	$200	$200	$195	$199
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$146	$196	$220	$253	$163	$196	$196	$196	$191	$195

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
SERVICE										
MILES	16.75		15.4	24.18	13.96				17.52	17.56
ADMIN HRS	0.480		0.416	0.767	0.247				0.651	0.512
PLAN HRS	0.497		0.724	0.913	0.219				0.641	0.599
TRVL HRS	1.283		1.176	0.951	1.134				0.974	1.103
PVI HRS	1.788		2.190	2.362	2.161				1.883	2.077
QDR HRS	0.024		0.056	0.188	0.000				0.009	0.055
REINS HRS	0.012		0.048	0.024	0.000				0.001	0.017
INT INSP HRS	0.000		0.003	0.000	0.000				0.000	0.001
MTG HRS	0.441		0.230	0.272	0.048				0.131	0.225
TOT HRS	4.525		4.642	5.477	3.809				4.289	4.588
COST OF QA	$108	$110	$115	$133	$91	$110	$110	$110	$103	$110
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$121	$124	$129	$145	$104	$124	$124	$124	$116	$124
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$117	$120	$125	$141	$100	$120	$120	$120	$112	$120

DCASR

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
WEAPONS										
MILES	26.72		19.29	45.39					25.33	23.35
ADMIN HRS	0.240		0.604	1.677					0.838	0.840
PLAN HRS	1.089		0.896	0.903					0.530	0.855
TRVL HRS	1.832		1.021	1.036					1.544	1.358
PVI HRS	2.235		3.842	2.217					2.265	2.639
QDR HRS	0.095		0.383	0.078					0.012	0.142
REINS HRS	0.000		0.367	0.031					0.000	0.100
INT INSP HRS	0.000		0.000	0.000					0.000	0.000
MTG HRS	0.792		0.158	0.273					0.353	0.394
TOT HRS	6.282		7.271	6.215					5.542	6.328
COST OF QA	$152	$154	$171	$158	$154	$154	$154	$154	$135	$154
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$164	$168	$185	$171	$167	$168	$168	$168	$147	$167
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$160	$164	$181	$166	$162	$164	$164	$164	$143	$163

COMMODITY	ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
MISSILE & SPACE										
MILES	17.34		17.11	12.65					26.12	14.64
ADMIN HRS	0.870		0.743	0.489					0.278	0.595
PLAN HRS	0.793		0.583	0.700					0.692	0.692
TRVL HRS	0.819		1.322	0.808					1.463	1.103
PVI HRS	2.035		2.080	1.912					1.653	1.920
QDR HRS	0.227		0.000	0.000					0.031	0.065
REINS HRS	0.000		0.000	0.058					0.000	0.014
INT INSP HRS	0.000		0.000	0.010					0.007	0.004
MTG HRS	0.224		0.150	0.123					0.222	0.180
TOT HRS	4.967		4.878	4.098					4.346	4.572
COST OF QA	$119	$110	$117	$97	$110	$110	$110	$110	$108	$110
COST OF CA	$13	$14	$14	$13	$13	$14	$14	$14	$13	$14
TOTAL COST	$131	$124	$130	$110	$123	$124	$124	$124	$121	$124
DEPOT COST	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)	($4)
NET COST	$127	$120	$126	$106	$118	$120	$120	$120	$117	$120

COMMODITY SUMMARY

COMMODITY	NET COST *	DISC WRKLD	DISC FACTOR
AIRCRAFT	$132	4.13%	$5
MUNITIONS	NA	0.00%	NA
C&T	$181	0.02%	$0
ELECTRICAL	$143	0.00%	$0
GENERAL	$149	84.31%	$126
CHEMICAL	$145	0.00%	$0
ELECTRONIC	$152	0.00%	$0
MECHANICAL	$146	11.55%	$17
NUCLEAR	NA	0.00%	NA
PETROLEUM	$195	0.00%	$0
SERVICE	NA	0.00%	NA
WEAPONS	$163	0.00%	$0
MSSL & SPACE	$120	0.00%	$0
DLA AVG	$153	100.0% DISC AVG	$148

* ROUNDED TO NEAREST DOLLAR

APPENDIX B

Look-Up Tables for DISC Commodities

Cost Per Contract

(FY87 $)

COST OF SOURCE INSPECTION
AS OF JUN 1987
DICC

******* CONTRACTS UNDER $1000 *******

FSC BEGIN	FSC END	DCASR ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
1500		$110	$117	$120	$120	$114	$117	$117	$117	$117	$116
1670		$154	$161	$157	$129	$156	$161	$161	$161	$202	$160
1680		$110	$117	$120	$120	$114	$117	$117	$117	$117	$116
2020	2040	$131	$130	$122	$127	$138	$130	$130	$130	$127	$130
2810	2840	$110	$117	$120	$120	$114	$117	$117	$117	$117	$116
2845		$113	$107	$112	$94	$105	$107	$107	$107	$104	$107
2915	2945	$110	$117	$120	$120	$114	$117	$117	$117	$117	$116
2950		$131	$130	$122	$127	$138	$130	$130	$130	$127	$130
2975		$110	$117	$120	$120	$114	$117	$117	$117	$117	$116
3110	4030	$131	$130	$122	$127	$138	$130	$130	$130	$127	$130
5305	5365	$142	$132	$132	$122	$138	$132	$132	$132	$124	$132
6115		$131	$127	$122	$114	$149	$127	$127	$127	$114	$126
7035	9680	$142	$132	$132	$122	$138	$132	$132	$132	$124	$132

******* CONTRACTS GREATER THAN OR EQUAL $1000 AND UNDER $2500*******

FSC BEGIN	FSC END	DCASR ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
1500		$118	$126	$129	$129	$122	$126	$126	$126	$126	$125
1670		$166	$173	$169	$138	$168	$173	$173	$173	$217	$172
1680		$118	$126	$129	$129	$122	$126	$126	$126	$126	$125
2020	2040	$141	$139	$131	$136	$148	$139	$139	$139	$136	$139
2810	2840	$118	$126	$129	$129	$122	$126	$126	$126	$126	$125
2845		$121	$114	$120	$101	$113	$114	$114	$114	$112	$114
2915	2945	$118	$126	$129	$129	$122	$126	$126	$126	$126	$125
2950		$141	$139	$131	$136	$148	$139	$139	$139	$136	$139
2975		$118	$126	$129	$129	$122	$126	$126	$126	$126	$125
3110	4030	$141	$139	$131	$136	$148	$139	$139	$139	$136	$139
5305	5365	$153	$142	$142	$131	$148	$142	$142	$142	$134	$142
6115		$140	$136	$131	$122	$160	$136	$136	$136	$122	$135
7035	9680	$153	$142	$142	$131	$148	$142	$142	$142	$134	$142

COST OF SOURCE INSPECTION
AS OF JUN 1987
DISC

******* CONTRACTS GREATER THAN OR EQUAL $2500 AND UNDER $10000*******

FSC BEGIN	FSC END	DCASR ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
1560		$123	$131	$134	$134	$127	$131	$131	$131	$131	$130
1670		$172	$179	$175	$144	$174	$179	$179	$179	$225	$178
1680		$123	$131	$134	$134	$127	$131	$131	$131	$131	$130
2020	2040	$146	$145	$136	$142	$153	$145	$145	$145	$142	$145
2810	2840	$123	$131	$134	$134	$127	$131	$131	$131	$131	$130
2845		$126	$119	$125	$105	$117	$119	$119	$119	$116	$119
2915	2945	$123	$131	$134	$134	$127	$131	$131	$131	$131	$130
2950		$146	$145	$136	$142	$153	$145	$145	$145	$142	$145
2995		$123	$131	$134	$134	$127	$131	$131	$131	$131	$130
3110	4030	$146	$145	$136	$142	$153	$145	$145	$145	$142	$145
5305	5365	$158	$147	$147	$136	$153	$147	$147	$147	$139	$147
6745		$146	$142	$136	$127	$166	$142	$142	$142	$127	$141
9905	9680	$158	$147	$147	$136	$153	$147	$147	$147	$139	$147

******* CONTRACTS GREATER THAN OR EQUAL $10000 AND UNDER $25000*******

FSC BEGIN	FSC END	DCASR ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
1560		$131	$139	$142	$142	$135	$139	$139	$139	$139	$138
1670		$184	$191	$187	$153	$186	$191	$191	$191	$240	$190
1680		$131	$139	$142	$142	$135	$139	$139	$139	$139	$138
2020	2040	$156	$154	$145	$151	$164	$154	$154	$154	$151	$154
2810	2840	$131	$139	$142	$142	$135	$139	$139	$139	$139	$138
2845		$134	$127	$133	$112	$125	$127	$127	$127	$123	$127
2915	2945	$131	$139	$142	$142	$135	$139	$139	$139	$139	$138
2950		$156	$154	$145	$151	$164	$154	$154	$154	$151	$154
2995		$131	$139	$142	$142	$135	$139	$139	$139	$139	$138
3110	4030	$156	$154	$145	$151	$164	$154	$154	$154	$151	$154
5305	5365	$169	$157	$157	$145	$164	$157	$157	$157	$148	$157
6745		$155	$151	$145	$135	$177	$151	$151	$151	$135	$150
9905	9680	$169	$157	$157	$145	$164	$157	$157	$157	$148	$157

COST OF SOURCE INSPECTION
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DISC

******* CONTRACTS GREATER THAN OR EQUAL $25000 *******

FSC BEGIN	FSC END	DCASR ATL	BOS	CHI	CLE	DAL	LA	NY	PHI	STL	DLA
1560		$133	$141	$144	$144	$137	$141	$141	$141	$141	$140
1670		$186	$194	$189	$155	$188	$194	$194	$194	$243	$193
1680		$133	$141	$144	$144	$137	$141	$141	$141	$141	$140
2030	2040	$158	$156	$147	$153	$166	$156	$156	$156	$153	$156
2810	2840	$133	$141	$144	$144	$137	$141	$141	$141	$141	$140
2845		$136	$128	$135	$113	$126	$128	$128	$128	$125	$128
2915	2945	$133	$141	$144	$144	$137	$141	$141	$141	$141	$140
2950		$156	$156	$147	$153	$166	$156	$156	$156	$153	$156
2995		$133	$141	$144	$144	$137	$141	$141	$141	$141	$140
3110	4030	$158	$156	$147	$153	$166	$156	$156	$156	$153	$156
5305	5365	$171	$159	$159	$147	$166	$159	$159	$159	$150	$159
5415		$157	$153	$147	$137	$180	$153	$153	$153	$137	$152
9515	9680	$171	$159	$159	$147	$166	$159	$159	$159	$150	$159

APPENDIX C

Update Procedures

Notes on Future Updates

1. As more regions adopt the new QAMIS and as the data bases for existing regions fill, more QAMIS data will be available. This should permit the use of the 2-alpha commodity code breakdown rather than the single alpha codes used in this report.

2. It is extremely important to exclude data errors from the analysis. The use of the CONDESCRIPTIVE procedure in SPSS is helpful in identifying data errors. For non-resident, standard inspection facilities, large values for any variable should be viewed with suspicion.

3. There are other areas of cost differences that should be explored in more detail. They are:

   a. the cost of data entry into QAMIS.

   b. the differential billing costs.

   c. Supply Center administrative costs.

   d. overhead costs (variable).

4. Programs used in the analysis are provided on the next two pages.

```
PROJECT: GOR                    MEMBER: P7027B          DATE: 87/06/11
GROUP:   GROVER                 LEVEL:  01.18           TIME: 08:03
TYPE:    JCL1                   USERID: GOR6040         PAGE: 01 OF 01

START                                                                    MOD
 COL  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8  FLAGS

   1  //GOR6040H JOB (6040,OR),'GROVER',CLASS=3,MSGCLASS=V                00010016  *
   1  //*  MEMBER=JCL(SPSSFREQ)                                           00020000
   1  //*  STATISTICS ON MANHOURS PER VISITS AT NONRESIDENT FACILITIES     00030016  *
   1  //STEP1 EXEC SPSSX                                                  00040000
   1  //INDATA  DD DSN=GOR.GROVER.QUADS.ATL.LA,DISP=SHR                   00050018  **
   1  //SYSIN   DD *                                                      00070000
   1  TITLE  MANHOUR STATISTICS FOR ATL                                   00080018  **
   1  COMMENT * MEMBER = JCL(SPSSFREQ) *                                  00090008  *
   1  DATA LIST FILE=INDATA FIXED RECORDS=1/                            00100000
   1  DATA LIST FILE=INDATA FIXED RECORDS=1/                            00110013  *
   7        TYP 16 (A) COMM 17 (A) PROV 19 (A) PLAN 24-27 PVI 46-49     00111017  *
   7        QDR 73-76 TRAVEL 77-80 TRNG 81-84 ADMIN 103-106 SHIPMENT 107-110  00120013  *
   7        INT 117-119 REINS 120-122 VISITS 123-124 MEETINGS 142-145   00130000
   1  SET MXWARNS = 100000                                              00140000
   1  SET UNDEFINED = NOWARN                                            00141008  *
   1  SELECT IF (TYP='N')                                               00142008  *
   1  SELECT IF (PROV='C')                                              00142111  *
   1  SELECT IF (VISITS GT 0)                                           00142217  *
   1  SELECT IF (VISITS LT 30)                                          00142317  *
   1  SELECT IF (SHIPMENT GT 0)                                         00142417  *
   1  SELECT IF (SHIPMENT LT 100)                                       00143013  *
   1  COMPUTE TOTHRS=PLAN+PVI+QDR+TRAVEL+TRNG+ADMIN+INT+REINS+MEETINGS  00143113  *
   1  SELECT IF (TOTHRS GT 0)                                           00143217  *
   1  COMPUTE PLANHRS=PLAN/VISITS                                       00144017  *
   1  COMPUTE ADMNHRS=ADMIN/VISITS                                      00145017  *
   1  COMPUTE REINHRS=REINS/VISITS                                      00146017  *
   1  COMPUTE MTNGHRS=MEETINGS/VISITS                                   00147017  *
   1  COMPUTE PVIHRS=PVI/VISITS                                         00148017  *
   1  COMPUTE QDRHRS=QDR/VISITS                                         00149017  *
   1  COMPUTE TRAVLHRS=TRAVEL/VISITS                                    00149117  *
   1  COMPUTE TRNGHRS=TRNG/VISITS                                       00149217  *
   1  COMPUTE INTHRS=INT/VISITS                                         00150008  *
   1  FREQUENCIES VARIABLES= COMM                                       00151010  *
   1  CONDESCRIPTIVE ALL                                                00152011  *
   1  BREAKDOWN TABLES=PLANHRS ADMNHRS REINHRS MTNGHRS BY COMM          00153013  *
   1  BREAKDOWN TABLES=PVIHRS QDRHRS TRAVLHRS TRNGHRS INTHRS BY COMM    00160000
   1  FINISH                                                            00170000
   1  /*                                                                00180000
   1  //
```

```
PROJECT: GOR                    MEMBER: P7027D                  DATE: 87/06/11
GROUP:   GROVER                 LEVEL:  01.23                   TIME: 07:56
TYPE:    JCL1                   USERID: GOR6040                 PAGE: 01 OF 01

START                                                                    MOD
 COL  ----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8  FLAGS

   1  //GOR6040A JOB (6040,OR),'GROVER',CLASS=3,MSGCLASS=V                 00010022  *
   1  //*  MEMBER=JCL(SPSSFREQ)                                            00020000
   1  //*  STATISTICS ON MANHOURS PER VISITS AT NONRESIDENT FACILITIES      00030016  *
   1  //*  THIS PROGRAM IS USED TO ANALYZE MANHOURS FOR DIFFERENT COST RANGES.00031023  **
   1  //STEP1 EXEC SPSSX                                                    00040000
   1  //INDATA  DD DSN=GOR.GROVER.QUADS.CHI.LA,DISP=SHR                     00050020  *
   1  //         DD DSN=GOR.GROVER.QUADS.CLE.LA,DISP=SHR                    00060020  *
   1  //         DD DSN=GOR.GROVER.QUADS.DAL.LA,DISP=SHR                    00061020  *
   1  //         DD DSN=GOR.GROVER.QUADS.STL.LA,DISP=SHR                    00062020  *
   1  //SYSIN   DD *                                                        00070000
   1  TITLE  MANHOUR STATISTICS FOR ALL REGIONS EXCEPT ATL                  00080022  *
   1  COMMENT * MEMBER = JCL(SPSSFREQ) *                                    00090008  *
   1  DATA LIST FILE=INDATA FIXED RECORDS=1/                              00100000
   7        TYP 16 (A) COMM 17-18 (A) PROV 19 (A) PLAN 24-27 PVI 46-49    00110019  *
   7        ODR 73-76 TRAVEL 77-80 ADMIN 103-106 SHIPMENT 107-110         00111021  *
   7        INT 117-119 REINS 120-122 VISITS 123-124 MEETINGS 142-145     00120013  *
   7        DOLLARS 214-225 CONTRACT 238-243                              00121019  *
   1  SET MXWARNS = 100000                                                00130000
   1  SET UNDEFINED = NOWARN                                              00140000
   1  SELECT IF (TYP='N')                                                 00141008  *
   1  SELECT IF (PROV='C')                                                00142008  *
   1  SELECT IF (VISITS GT 0)                                             00142111  *
   1  SELECT IF (VISITS LT 30)                                            00142217  *
   1  COMPUTE TOTHRS=PLAN+PVI+ODR+TRAVEL+ADMIN+INT+REINS+MEETINGS         00143021  *
   1  SELECT IF (TOTHRS GT 0)                                             00143113  *
   1  SELECT IF (CONTRACT GT 0)                                           00143219  *
   1  SELECT IF (DOLLARS LT 1000000000)                                   00143319  *
   1  SELECT IF (DOLLARS GT 0)                                            00143421  *
   1  COMPUTE SIZE=DOLLARS/CONTRACT                                       00143619  *
   1  COMPUTE PLANHRS=PLAN/VISITS                                         00143719  *
   1  COMPUTE ODRHRS=ODR/VISITS                                           00143821  *
   1  COMPUTE TRVLHRS=TRAVEL/VISITS                                       00143921  *
   1  COMPUTE ADMNHRS=ADMIN/VISITS                                        00144021  *
   1  COMPUTE INTHRS=INT/VISITS                                           00144121  *
   1  COMPUTE REINHRS=REINS/VISITS                                        00144221  *
   1  COMPUTE MTGHRS=MEETINGS/VISITS                                      00144321  *
   1  COMPUTE PVIHRS=PVI/VISITS                                           00144419  *
   1  COMPUTE VISITHRS=TOTHRS/VISITS                                      00144521  *
   1  SELECT IF (VISITHRS LT 80)                                          00144621  *
   1  IF (SIZE GT 0 AND SIZE LT 1000) RANGE=1                             00144719  *
   1  IF (SIZE GE 1000 AND SIZE LT 2500) RANGE=2                          00144822  *
   1  IF (SIZE GE 2500 AND SIZE LT 10000) RANGE=3                         00144922  *
   1  IF (SIZE GE 10000 AND SIZE LT 25000) RANGE=4                        00145022  *
   1  IF (SIZE GE 25000) RANGE=5                                          00146022  *
   1  FREQUENCIES VARIABLES= COMM                                         00150008  *
   1  CONDESCRIPTIVE ALL                                                  00151010  *
   1  BREAKDOWN TABLES=PLANHRS PVIHRS ODRHRS TRVLHRS ADMNHRS BY RANGE     00152021  *
   1  BREAKDOWN TABLES=INTHRS REINHRS MTGHRS VISITHRS  BY RANGE           00153021  *
   1  FINISH                                                              00160000
   1  /*                                                                  00170000
   1  //                                                                  00180000
```

END

DATE

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DTIC